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Lift maximization in a flow around a system of two smooth contours

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Abstract

The problem of lift maximization for a system of two smooth contours of given lengths placed in an inviscid incompressible flow is analyzed. The distance between the contours is assumed to be given. By invoking the theory of inverse boundary value problems in fluid dynamics, the optimization problem is reduced to an isoperimetric variational problem, which is solved numerically. Examples are presented, and conclusions are drawn.